

Claims

1. A piston engine comprising at least one balance shaft unit in whose crankcase a crankshaft is supported and at whose crankcase (2) a window (36) surrounded by a flange (16; 16, 17) is provided at the side, with the flange forming a joint face to which the housing (20; 20, 21) of the balance shaft unit (18; 18, 19) is fastened by means of screws (70), with a balance shaft being supported in said housing, characterized in that
 - a) the balance shaft (22; 22, 23) has a gear (24; 24, 25) which projects through the window (36) into the interior of the crankcase (2) and which is driven by a gear (10) seated on the crankshaft (6);
 - b) the housing (20; 20, 21) of the balance shaft unit (18; 18, 19) has a joint face (40; 40, 41) which is displaceable on the joint face (40; 40, 41) of the crankcase (2) for the setting of the gear clearance before the screws (70) are tightened.
2. A piston engine in accordance with claim 1 characterized in that a second balance shaft unit (19) is provided in whose housing (21) a further intermediate shaft (35) is supported in addition to the second balance shaft (34) with an intermediate gear (34) which meshes, on the one hand, with the gear (25) of the balance shaft (23) and, on the other hand, with the gear (10) seated on the crankshaft (6).
3. A piston engine in accordance with claim 1 characterized in that the joint face (40; 40, 41) includes an obtuse angle (44) with the connection straight line of the axes of the crankshaft and the

balance shaft in a section imagined normal to the crankshaft axis (6').

4. A piston engine in accordance with claim 3, characterized in that the joint faces (40; 40, 41) are parallel to the plane of symmetry of the engine.
5. A piston engine in accordance with claim 1, characterized in that at least one sliding guide (65, 66, 67) is provided in the joint faces (40; 40, 41) of the crankcase (2) and of the housing (20; 20, 21) of the balance shaft unit (18; 18, 19) and permits a displacement in a plane normal to the crankshaft (6).
6. A piston engine in accordance with claim 1, characterized in that the sliding guide (65, 66, 67) consists of a straight groove (66) in the sliding direction in the joint face (40; 40, 41) and of a key (65) let into the joint face.
7. A piston engine in accordance with claim 1, characterized in that the balance shaft (22; 22, 23) runs around in divided bearings in its housing (20; 20, 21), with the one bearing half (28; 28, 29) being formed in the housing (20; 20, 21) of the balance shaft unit (18; 18, 19) and the other being made as a bearing cover (30) connected to the first bearing half (28; 28, 29).
8. A piston engine in accordance with claim 1, characterized in that the balance shaft (22; 22, 23) runs around in undivided bearings (28*) in its housing (20; 20, 21).

9. A piston engine in accordance with claim 1, characterized in that the gear (24; 24, 25) of the balance shaft is arranged at its center.
10. A piston engine in accordance with claim 2, characterized in that the gear (24) of the first balance shaft unit (18) and the intermediate gear (34) of the second balance shaft unit (19) mesh with the gear (10) seated on the crankshaft (6) at positions (42, 43) mutually offset by 180 degrees.